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Prehistoric disc wheels in the Netherlands

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INTRODUCTION

In 1838 peat-cutters found a one-piece disc wheel the very clumsiness of which roused the curiosity of journalists and authorities, so that it was saved from destruction. Eventually the well known Leiden antiquarian L.J.F.Janssen (1848, pp. 94-97) examined and commented upon this wheel. Its close resemblance to what was known of the *tympana* of the Roman *plaustra*, coupled with a fallacious chain of tempting arguments, led him to the misconception that this wheel (and a second one of different type) was of Roman origin. Once labelled they were labelled forever; and in so far as they were not thought to represent giant lids or even table tops (Pleyte, 1882, p.32), these wheels and the more recent comparable finds continued to be considered of Roman origin.

It was only in 1955, when still another wheel of the same type turned up in direct connection with a Neolithic trackway at Nieuw-Dordrecht (then under excavation), that Dr. W. van Zeist came to the conclusion that at least this wheel was to be considered of Neolithic origin. Even so, it remained questionable whether all wheels of this type were of Neolithic age, or whether these spanned a much longer period. Since 1955 five more one-piece disc wheels have been found in the peat. On the basis of the palynological evidence (dealt with by Mrs. M. R. van der Spoel-Walvius in a recent paper, 1964) and C 14 measurements, the wheels all proved to be contemporary with the Nieuw-Dordrecht wheel. This was inducement enough to study the whole group of one-piece oak disc wheels found in the Northern Provinces of the Netherlands, and to collect as much information on these finds as possible.

We now know that a total of ten finds, comprising in all thirteen one-piece disc wheels of the same type, have been recovered from the peat deposits of the provinces of Groningen, Drenthe and Overijssel; of these ten finds, six could be dated, with the help of C 14 measurements and pollen analysis, to the end of the third millennium B.C. No comparable finds are known from other regions in the Netherlands.

This study deals with the origin, dating, and implications of the wheel finds. Some later bi- and tripartite disc wheel finds are also discussed, notably those from the excavations at Ezinge in the years 1924-1934 (very kindly made available for publication by their excavator, Prof. Dr. A. E. van Giffen). In an introductory section, a brief survey is given of the present state of knowledge concerning the Neolithic cultures met with in the northern provinces of the Netherlands, to serve as a background for the discussion. The paper concludes with a complete catalogue of Dutch disc wheel finds.

The historiography of wheeled traction sprang from the study of the representational art and the treatises of the ancients. As early as 1817, J. C. Ginzroth (Inspec-

tor of Wagon-building to the King of Bavaria) published his magnificent work *Die Wagen und Fahrwerke der Griechen und Römer und anderer alten Völker*. Thus, the disc wheel became known from ancient art, and even such problems as wheels turning with the axles or on the axles were discussed, long before the first actual disc wheel find was recorded. In fact, the finds from Gasselsterboerveen and Valthe, registered by L. J. F. Janssen in 1848, might well be the first authentic prehistoric disc wheels to enter scientific literature. The lack of actual finds must have been responsible for the often theoretical character of the discussions, which centred, for instance, on the question as to the invention of the wheel. Was the cart developed out of the sledge, which eventually might have been used with rollers underneath to carry stones (as Ginzroth had suggested), or was the vehicle invented in ritual context, and had spindle whorls been the prototypes for the wheel? Mötefindt (1918) gives a survey of the different opinions on this point, but he also presents a classification of disc and early spoked wheels based on a realistic discussion of the available evidence, still largely derived from classical sources.

In the last half century, the multiplication of finds of actual remains and models of prehistoric wheels and vehicles has pushed the problems of theoretical character into the background; the centre of invention of wheeled vehicles and the history of their diffusion became the main points of interest. These problems have been specially dear to Childe, whose studies on the subject are of primary importance (1951, 1954, 1955). The most recent publication is by I. Bóna (1960), who, in a searching study, takes into account new finds from Southeastern and Eastern Europe and their implications.

Thus, at the outset of our discussion, the following synoptic picture can be drawn. The solid disc wheel can be traced back as far as the Uruk period (late 4th millennium B.C.) in Mesopotamia, where script signs on pictographic tablets represent both sledges and vehicles which are identical to these sledges but for the wheels that are added underneath. From the early 3rd millennium onward, wheeled vehicles (both wagons and carts) appear in the Royal tombs of Southern Mesopotamia serving as hearses (at Kish, Susa, Khafaje, and Ur) and in the representational art. The wheels present themselves already as compound plank-built discs with separate naves and tyres. By the beginning of the 3rd millennium models of carts, wagons and wheels occur in Assyria (Tepe Gawra VIII) and Turkmenia (Anau III and Shah Tepe III), demonstrating the rapid spread of wheeled traction. Still in the first half of the 3rd millennium, model disc wheels make their appearance in some of the settlements of the Kuro-Araxes Culture in the Southern Caucasus and Eastern Asia Minor. The first disc wheel and wagon models of the Danubian area are hardly to be dated later. In the second half of the 3rd millennium, solid disc wheels appear in the South-Russian steppe area, and, far to the East, in the Indus valley. Further afield in temperate Europe, the picture was by no means clear. Of the ambiguous engravings on the slabs of the portholed stone cist at Lohne-Züschen (Hessen) in Germany, neither the date nor the fact that

ox-drawn carts are really represented is agreed upon. The date secured by pollen analysis for a wooden disc wheel found at Beckdorf (Lower Saxony) in Germany at the end of the Neolithic or in the Early Bronze Age was but hesitantly accepted. Only the tripartite disc wheels from the North-Italian lakeside dwellings of Castione and Mercurago and from the *Wasserburg* Buchau in Southern Germany, datable to the 13th century and c. 1000 B.C. respectively, gave a firm hold.

Thus, it would even have been possible to believe that the spoked wheel had made its appearance in temperate Europe at an earlier date than the disc wheel. The spoked wheel is likely to have originated in connection with the adoption of the horse as a draught animal, when vehicles of lighter construction and greater manoeuvrability, such as war chariots, had to be constructed. Its centre of origin in the Near East, somewhere near the eastern border of Anatolia, is not yet clear, but the date of its first appearance may have been shortly after 2000 B.C. The earliest spoked wheel evidence from continental European soil is furnished by clay models from Věteřov settlements in Moravia and Slovakia, datable about 1500 B.C. (according to Bóna, shortly after 1400 B.C.). The history of spoked wheels in Europe can then be continued down into the Iron Age by a series of models and actual bronze wheels belonging to votive wagons, wheeled cauldrons, wagons serving as hearses on the pyre and by representations of chariots on rock engravings. Thus, the spoked wheel was connected with ritual, burial and warfare. But ordinary transport in Europe probably remained true to disc wheels up to the beginning of our era, as the disc wheel finds suggest.

In the present study, the view is presented that the first disc wheels found their way into Northwestern Europe as an element of a specific group of cultures – the Battle Axe Cultures. The evidence seems to support this conception. It is based, however, on a limited number of chance finds, and future discoveries might conceivably show that the turning wheel was rather propagated by diffusion, independent of cultural barriers.